

Women's contribution to climate change action: A gender analysis

*Retno Setyowati**, *Eksa Rusdiyana*, *Widiyanto*, *Sugihardjo*, *Eny Lestari*, and *Micelle Lovinia Arwindianti*

Faculty of Agriculture, Sebelas Maret University, Jl. Ir Sutami 36 A, Kentingan, Jebres, Solo, Central Java, Indonesia

Abstract. Women's participation in the Climate Village Program will not only strengthen village resilience to climate change, but also accelerate the achievement of sustainable development goals (SDGs), especially those related to gender equality, poverty alleviation, and environmental protection. This research aims to analyze the women's participation and role in proklim in Karanganyar Regency, Central Java Province. This research used a descriptive qualitative approach. Data were collected through interviews, field observation, documentation, and focus group discussion (FGD). Informants consisted of local activist, forestry extensionist, agricultural extensionist, health care service office, village government, farmer group, female farmer group, Family Welfare Program (FWP), and youth organization (Karang Taruna). Data validation was carried out using source and method triangulations. The finding of research indicates that women are present not only to help but also to be the main activist of proklim activities. This movement is embodied into such institutions as female farmer group, Family Welfare Program (FWP), and waste bank driven by women through activities food production from the surrounding environment, healthy (organic) farming practices, health education and environmental hygiene, basic health services (posyandu for toddlers, adolescents and elderly), prevention of infectious diseases through "Jumantik", waste reduction education, education on circular economy utilization of waste, making biopores and utilizing organic waste (magot cultivation).

1. Introduction

Climate change is a major threat faced by the global community, and its impacts are particularly felt by vulnerable rural communities, including in Indonesia. The impacts of climate change are irrespective of geographical location, ethnicity, religion, nation, and even gender as all are affected equally. According to Arisaputra et al. [1] villages in Indonesia are often dependent on natural resources for daily survival, such as agriculture, fisheries, and forestry. This dependency makes villages highly vulnerable to changes in climate patterns, such as erratic rainfall, increased temperatures, and increased frequency

* Corresponding author: retnosetyowati@staff.uns.ac.id

of natural disasters such as floods, droughts, and landslides. The Climate Village Program (ProKlim), initiated by the Ministry of Environment and Forestry (MoEF), seeks to encourage the active participation of communities and all parties in implementing local actions to increase resilience to the impacts of climate change, Fajar and Rafi [2].

Women are the group most affected by climate change, such as in physical activities, health, work and domestic household activities. According to Holilah [3] mentioned that women often play a central role in household management, small-scale agriculture, and maintenance of water resources. While they play an important role in ensuring food security, water management, and land management, they are often overlooked in environmental and climate-related decision-making. In fact, women have local knowledge that is critical in climate adaptation and mitigation efforts, such as in sustainable agricultural practices, waste management, and natural resource management. Women's participation becomes very important in the implementation of proklam. Women are not only victims of the impacts of climate change, but can also be active agents of change. Women's participation in environmental decision-making is important to advance gender equality. Their experience and knowledge in natural resource management can contribute significantly to the success of this program, Strumskyte et al [4].

Proklam recognizes the importance of involving all parties in the process of climate change adaptation and mitigation, including women. The program provides space for women to be involved. In various activities, ranging from green land management, water conservation, renewable energy, to waste management and the environment, Rijhwani and Singh [5], disseminating information related to climate change at the community level, liaising between families and communities, and mobilizing community members in carrying out ProKlim programs, educating the younger generation about the importance of protecting the environment and adapting to climate change, Turner and Clifton [6], caring more about climate change, Elert and Lundin [7]. However, to effectively encourage women's participation, greater efforts are needed to address the structural barriers they face, such as lack of access to resources, limited education, and social norms that limit women's role in decision-making. Therefore, it is important for ProKlim to provide specialized support for women, including by creating inclusive policies and providing greater access to training and resources.

Women's participation in the Climate Village Program will not only strengthen village resilience to climate change, but also accelerate the achievement of sustainable development goals (SDGs), especially those related to gender equality, poverty alleviation, and environmental protection. Through the active involvement of women, it is hoped that a more resilient, inclusive and sustainable village development model can be created. Involving women in many non-economic or community activities is more successful when compared to involving male groups who are already constrained by breadwinning work. Even though women are involved in earning a living, but for social activities, women are still able to share their time, Yessi [8]. Women are no longer considered as objects of the program, parties who have no role, but instead need to be given access and opportunities in contributing to achieving the goals of development programs including the climate village program. Based on this background, this study aims to analyze the role of women in the action of the climate village program (proklam) and the challenges faced in contributing to the achievement of proklam goals.

2. Materials and methods

This research adopts a descriptive qualitative methodology aimed at understanding social phenomena within their natural context. Data collection was conducted through a combination of Focus Group Discussions (FGDs), direct interviews, documentation

review, and field observations. The chosen research site, Karanganyar Regency in Central Java Province, was selected purposively due to its proactive implementation of pro-climate initiatives, making it a fitting case study for this research. The study focuses on exploring the roles and contributions of various community elements in fostering sustainable and environmentally friendly practices.

The selection of informants followed purposive and snowball sampling techniques to ensure the inclusion of diverse perspectives and relevant stakeholders. Informants included women's groups, such as Family Welfare Program (PKK) members, farm women's groups, and waste bank operators, as well as local activists, forestry and agricultural extension workers, health cadres, representatives from related agencies, village governments, farmer groups, and youth organizations like Karang Taruna. This broad spectrum of participants allowed for a comprehensive understanding of community dynamics and climate-focused interventions.

To ensure the validity and reliability of the data, triangulation methods were employed. Source triangulation involved cross-checking responses from different informants to identify consistencies and discrepancies, while method triangulation compared findings from multiple data collection methods, including FGDs, interviews, documentation, and field observations. This rigorous approach to data validation strengthened the credibility of the research findings, providing a nuanced and reliable depiction of pro-climate initiatives and community involvement in Karanganyar Regency.

3. Result and Discussion

3.1 Women's Participation and Institutionalization in ProKlim

ProKlim applies Community Based Development, directed to strengthen adaptation and mitigation carried out by the community and its institutions in mobilizing and managing human resources and natural resources in the village and those from outside the village in an effort to mitigate the impacts of climate change, Albar et al [9]. The principles of community empowerment in the implementation of ProKlim are community-based, resource-based, and sustainable, Srifauzi and Azhimi Industrial [10]. Women serve as the main activists who drive various environmental initiatives at the village level. Their involvement in ProKlim includes strategic roles in various fields that are important for the success of this program. They not only assist, but also lead a number of key activities in climate change mitigation and adaptation. Women's active participation in the program is manifested in various institutions such as farmer women's groups, the Family Welfare Program (PKK), and waste banks.

3.2 Women Farmers Group

The role of women in farmer women groups contributes directly to adopting more environmentally friendly farming methods, such as the use of organic fertilizers and water-saving irrigation techniques. According to Ninasari [11], the agricultural sector is highly affected by climate change, such as changing rainfall patterns and increasing temperatures that can affect crop productivity. The involvement of women in farmer women's groups can develop agricultural systems that are more resilient and adaptive to climate change, while maintaining village food security. Farmer Women's Groups (KWT) play a very important role in the Climate Village program, which aims to improve food security and community welfare in rural areas. KWT not only serves as a forum for women to participate in agricultural activities, but also as an agent of change in natural resource

management and family economic improvement, Afifah et al [12]. The positive attitude of farm women towards the Sustainable Food Yard (P2L) program shows that they are committed to maintaining environmental sustainability through environmentally friendly agricultural practices. Overall, the role of KWT in the Climate Village program is very significant, both in improving food security, environmental management, economic independence, and women's empowerment. With proper support from the government and related institutions, KWT can become a major pillar in sustainable development in rural areas. Figure 1 below presents the activities of the Srikandi women farmer group in Karangturi Village, Gondangrejo, Karanganyar, which actively conducts regular meetings to discuss group activities, food, climate and agricultural issues; traditional food festivals



and activities in food production from the surrounding environment through the sustainable food yard program.

(a) (b) (c)

Fig 1. Monthly meeting of the Women Farmers Group (KWT) (a), Festival of Women Farmers Group Cuisine (b), Sustainable Food Yard (c)

3.3 Family Welfare Program (PKK)

The Family Welfare Program (PKK) is another platform where women play a central role. According to Muktiono [13], PKK is not only engaged in family welfare, but also plays a role in educating the public about environmental issues, including the impacts of climate change. Through PKK, women disseminate information about the importance of sustainable natural resource management, environmental conservation efforts, and how communities can adapt to climate change. The role of women through PKK is also involved in activities such as tree planting, creating green parks, and managing village water sources that are important for maintaining the balance of local ecosystems. The role of Family Welfare Empowerment (PKK) in the Climate Village (ProKlim) program is very significant, especially in the context of strengthening community capacity to deal with climate change. PKK functions as an agent of change that mobilizes the community to actively participate in mitigation and adaptation efforts to climate change. Through training and empowerment programs, PKK can improve the knowledge and skills of its cadres, so that they are able to implement various initiatives that support environmental sustainability and community resilience. PKK plays a role in educating the community on the importance of waste management, energy saving, and sustainable use of natural resources. For example, sustainable waste management is one of the main focuses in this program, where PKK can facilitate socialization and training to the community on how to sort waste and process it into valuable products. In addition, PKK also plays a role in building strong social networks at the community level. The social capital built through interactions between PKK members increases collaboration in the implementation of the

Climate Village program. This is important because the success of the program relies heavily on the active participation of the community. The level of community participation in this program is still in the medium category, which indicates the potential to increase community involvement through a more inclusive and participatory approach.

PKK in Karanganyar district regularly holds monthly and even weekly meetings, contributing significantly to the development of local policies that support the Climate Village program. By involving PKK cadres in the planning and implementation process, the resulting policies will be more relevant and in line with community needs. This is in line with ProKlim's goal to increase community resilience to the impacts of climate change and reduce greenhouse gas emissions. The role of PKK in the Climate Village program is crucial in creating awareness and collective action at the community level. Through education, empowerment, and strengthening social networks, PKK can help communities to be better prepared to face the challenges posed by climate change, as well as encourage better environmental sustainability. The PKK work program through integrated service posts (posyandu) for the health of infants, adolescents, and the elderly and also plays a role in anticipating the spread of infectious diseases through the activities of the "jumantik" cadre of Juru Memantau Jentik. Figure 2 below shows the PKK activities in its role in supporting pro-climate implementation.



Fig 2. PKK activities in supporting Proklim: Kader Jumantik (a); Posyandu Balita (b); and Posyandu Remaja (c)

3.4 Village Waste Bank

Women also play a major role in mobilizing waste banks, which is one of the important initiatives in Proklim. According to Andayani et al [14] a waste bank is a collective effort to manage waste at the village level by recycling and utilizing reusable waste. Through women-led waste banks, communities not only reduce environmental pollution but also create economic value from the managed waste. Women are the main drivers in mobilizing families and communities to be more aware of the importance of proper waste management. These waste banks not only serve as an environmental solution, but also support the improvement of the village economy through the sale of processed waste, Suryani [15]. Waste banks play an important role in the Climate Village program, which aims to increase community awareness towards environmental management and reduce the impact of climate change. Through integrated waste management, waste banks not only serve as a place for storing and sorting waste, but also as a means of community empowerment to turn waste into an economically valuable resource. This is in line with the 3R principle (reduce, reuse, recycle) promoted by the Climate Village program, which aims to reduce greenhouse gas emissions and improve environmental quality. One of the main

benefits of waste banks is increased community participation in waste management. By actively involving the community, waste banks encourage them to sort and managewaste independently, which in turn can reduce the amount of waste disposed of in landfills. The program also provides training and mentoring to the community to improve their skills in waste processing, so that they can produce recycled products that have selling value. In addition, the waste bank has become an information and education center on the importance of sustainable waste management. From an economic perspective, waste banks provide financial benefits to the community. By managing waste effectively, communities can earn additional income from the sale of recyclables. This not only



improves the economic welfare of the community, but also creates awareness of the economic value of waste that was previously considered useless.

Fig 3. Women's Activities in the Village Waste Bank: Utilization of Waste with Economic Value (a); and Education on the Utilization of Organic Waste through Magot Cultivation (b).

Based on these 3 institutions, the strategic role of women in pro-climate, the form of local action, and the variety of activities can be mapped as presented in Table 1 below.

Table 1. Women's Actions and Institutions in Proklim

No.	Institutional	Action Type	Activity Forms
1	Women Farmers Group (KWT)	Adaptation	<ol style="list-style-type: none"> 1. Food production from the surrounding environment 2. Healthy (organic) farming practices 3. Education
2	Family Welfare Empowerment (PKK)	Adaptation Mitigation	<ol style="list-style-type: none"> 1. Health education and environmental hygiene 2. Basic health services (posyandu for toddlers, adolescents and elderly) 3. Prevention of infectious diseases through "Jumantik"
3	Waste Bank	Mitigation	<ol style="list-style-type: none"> 1. Waste reduction education 2. Education on circular economy utilization of waste 3. Making biopores and utilizing organic waste(magot cultivation)

Source: Data Analysis, 2024

Apart from the three institutions that are generally the basis for women to contribute to climate change adaptation and mitigation, women also contribute to natural resource management at the family and community levels. They are directly involved in daily activities related to water, food, and domestic waste management, all of which have a major influence on the resilience of villages to the impacts of climate change. For example, in water management, women are often responsible for ensuring the availability of clean water for the family, especially during the long dry season due to climate change. According to Salampey et al [16], women have knowledge and practical experience that is very relevant in climate adaptation efforts. The existence of women as the driving force in Proklam cannot be separated from their ability to divide their time efficiently between household responsibilities and social and environmental activities. They are able to carry out dual roles, where in addition to taking care of the family, they are also active in activities that aim to protect the environment and ensure the resilience of the village in the future. According to Yuwono et al [17], women have strong leadership capabilities, where they can influence and mobilize family and community members to be actively involved in Proklam activities.

In addition, women are also agents of information dissemination at the community level, have a strategic position as a liaison between families, communities, and village governments, becoming a bridge in disseminating knowledge and good practices regarding climate change adaptation, such as the use of environmentally friendly technology, more sustainable ways of land management, and the importance of natural resource conservation. This role makes women key in educating the younger generation on environmental issues, as well as in shaping broader environmental awareness in the community, Setiawan et al [18]. For women's participation in Proklam to become stronger, more attention is needed to the barriers they still face, such as limited access to resources, training, and decisions at the village level. According to Huda and Jodi [19], some social norms that limit women's role in decision-making also need to be changed so that women can participate more widely and empowered. Therefore, Proklam needs to create more inclusive policies, give women greater access to training related to climate change adaptation and mitigation, and provide resources that support their activities. Overall, women's participation in Proklam in Karanganyar District not only increases village resilience to climate change, but also strengthens the social and economic aspects of the community. Through women's active involvement, a more resilient, inclusive and sustainable village development model is expected. Women's participation in Proklam also supports the achievement of sustainable development goals (SDGs), especially related to gender equality, poverty alleviation, and environmental protection.

4. Conclusion

The research highlights the significant role of women in Proklam activities, where they are not just supporters but also key activists driving the movement forward. Their involvement is evident in various institutions such as farm women's groups, the Family Welfare Program (PKK), and women-led waste banks. Women's contributions are particularly impactful because they effectively balance their domestic responsibilities with active participation in community initiatives, making them a vital force in fostering social and environmental change.

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